

BEFORE THE  
POSTAL REGULATORY COMMISSION  
WASHINGTON, DC 20268-0001

Price Elasticities and  
Internet Diversion

)  
)  
)

Docket No. RM2014-5

**VALPAK DIRECT MARKETING SYSTEMS, INC. AND  
VALPAK DEALERS' ASSOCIATION, INC.  
COMMENTS IN RESPONSE TO ORDER NO. 2117  
(September 22, 2014)**

Order No. 2117, "Notice and Order Scheduling Technical Conference," set September 19, 2014, as the deadline for filing Comments on Attachment A — "A Branching AIDS Model for Estimating U.S. Postal Price Elasticities" by Lyudmila Y. Bzhilyanskaya, Margaret M. Cigno and Edward S. Pearsall (hereinafter "BCP") — attached to the Commission's Order. To assist the Commission, Valpak Direct Marketing Systems, Inc. and Valpak Dealers' Association, Inc. ("Valpak") jointly submit the following Statement of John Haldi, Ph.D.

Respectfully submitted,

/s/

---

William J. Olson  
Jeremiah L. Morgan  
John S. Miles  
WILLIAM J. OLSON, P.C.  
370 Maple Avenue West, Suite 4  
Vienna, Virginia 22180-5615  
(703) 356-5070

Counsel for:  
Valpak Direct Marketing Systems, Inc. and  
Valpak Dealers' Association, Inc.

**DOCKET NO. RM2014-5**  
**STATEMENT OF JOHN HALDI, Ph.D.**  
**on A Branching AIDS Model for Estimating U.S. Postal Service Elasticities**  
**by Lyudmila Y. Bzhilyanskaya, Margaret M. Cigno, and Edward S. Pearsall**  
**September 19, 2014**

The paper by BCP represents an interesting effort to develop a different approach to estimate statistically the elasticity of demand for postal products and services. That BCP have made a prodigious effort is obvious. One notable achievement of their methodology is that they are able to estimate not only the own-price elasticity of demand for individual products, but also the cross-price elasticity of demand for those products. It appears that the BCP model is a step in the right direction towards improving how price elasticities are reported.

The paper by BCP presents a detailed discussion of their methodology. It also presents summary results for 2013, the most recent year for which data are available. The following comments focus on those **results** as explained by BCP. A critique of their methodology is left for others.

**I. BCP claim that their estimated elasticities conform well with USPS elasticity results, but they need to provide more support for this claim.**

With respect to results of their methodology, BCP make the following statement:

The elasticities derived from the estimated equations **conform well to ... the USPS elasticity results** expected from conventional demand models. [*Id.*, p. 1 (emphasis added).]

BCP do not offer any quantitative analysis comparing their elasticity estimates with those of the Postal Service to support the assertion that they “conform well.” Does this mean that all their “elasticities derived from the estimated equations” are within  $\pm 5$  percent of USPS elasticity estimates? Or  $\pm 10$  percent? Or  $\pm 25$  percent? Or is the percentage difference

sometimes wider still? Are their elasticity estimates **consistently** greater than (or less than) USPS elasticity estimates, *i.e.*, possibly biased? Or do their estimates fall randomly above and below the comparable USPS estimates? Neither the paper itself nor the appendix provides any analysis comparing the extent to which their elasticity estimates in fact conform with (or differ from) updated elasticity estimates filed by the Postal Service on January 22, 2014. Some quantitative analysis by BCP to support their statement would enhance the usefulness of their paper.

BCP do explain that:

The own-price elasticities are always negative. All but one of the class-level own price elasticities are statistically significant at the 95 percent confidence level; 16 out of 20 of the category-level own-price elasticities are negative and significant. Therefore, our estimates comply fully with the most fundamental requirement of demand theory. [*Id.*, p. 19.]

Although this statement is partially reassuring, it does not support BCP's statement that their elasticities "**conform well to ... the USPS elasticity results.**"

Unfortunately, a straightforward apples-to-apples comparison between BCP's elasticity estimates and those of the Postal Service is made difficult by certain considerations discussed below. This helps demonstrate why BCP — not the reader — should provide a quantitative analysis that constitutes an apples-to-apples comparison showing the extent of support for their statement that their estimated elasticities "conform well to ... the USPS elasticity results expected from conventional demand models."

**A. In an apple-to-apples evaluation to assess conformity, aggregations used by BCP should conform to those used by the Postal Service.**

BCP report elasticity estimates for some groupings of mail (*e.g.*, subclasses, products) that appear to differ from the aggregate groupings as reported by the Postal Service. In Standard Mail, for example, BCP report separate elasticity results for Standard Regular and Standard Non-profit Mail (p. 19, Table 3). The Postal Service, by contrast, combines non-profit mail with commercial mail and does not report separate elasticity estimates for either category. Thus, BCP's elasticity estimates are not directly comparable to those of the Postal Service. At the same time, the Postal Service publishes separate elasticity estimates applicable to (i) the former ECR subclass and (ii) Standard Mail (both commercial and non-profit). To have any strictly apples-to-apples comparison of elasticities, the underlying data need to be aggregated in a manner that enables comparability. BCP give the reader no clue concerning how the separate elasticities for commercial and non-profit Standard Mail should be combined into a single estimate comparable to that published by the Postal Service.

BCP state that:

Figure 1 presents the branching tree lying on its side. The tree closely follows the product definitions and aggregations currently used in the quarterly Revenue, Pieces and Weight (RPW) reports that the USPS files with the PRC. [*Id.*, p. 3.]

Perusal of Figure 1, p. 4, indicates that this statement is generally correct. Within Standard Mail, however, it is not clear how BCP treat the Carrier Route category (*i.e.*, as distinct from Standard Flats, or in combination with Standard Flats). Do they estimate separate elasticities for Carrier Route and Standard Flats, as does the Postal Service (within the aggregation

scheme used by the Postal Service)? If so, where are those separate estimates to be found, and how do they compare with USPS estimates?

Along the same line, for First-Class Mail, Priority and Express Mail, Periodicals and Package Services, an almost 1-to-1 correspondence appears to exist between the BCP's branching tree and the quarterly RPW Report that the Postal Service files with the Commission. Turning to Standard Mail, in Table 1 below, the **rows** are the categories of Standard Mail as shown in the quarterly RPW for Market Dominant Products.<sup>1</sup> Excluding parcels, which are now a *de minimis* category in Standard Mail, RPW reports data for five categories in Standard Mail. The **columns** in Table 1 here correspond to the breakdown for Standard Regular Mail shown in BCP's Appendix, pp. 26-27. As BCP report data for only four categories, clearly a 1-to-1 correspondence does not exist between RPW and BCP categories of Standard Mail. With respect to flats (catalogs) in Standard Mail — *i.e.*, both Carrier Route and Standard Flats — one can only speculate where they fit in BCP's branching tree shown in either their Figure 1 (p. 4) or the data shown in their Appendix on pp. 26-28. For example, does BCP's category "Auto" refer to letters only, or does it include flats that receive automated processing on the FSS? Does BCP's category of "CR HD & Sat" include saturation letters **and flats, as well as Carrier Route Flats**, similar to the Postal Service's "former ECR" category? If BCP were to compare their elasticity estimates with those of the

---

<sup>1</sup> Omitted from Table 1 here are the following three categories: EDDM Retail, as well as Domestic and International NSAs. Although BCP give separate elasticity estimates for Commercial and Non-profit Standard Mail, separate data for those two categories are not provided in the quarterly RPW Report as filed by USPS with the PRC. To be sure, however, such data can be found in quarterly billing determinants.

Postal Service, and assure the reader that the comparison is apple-to-apples, speculation about issues such as those discussed here would not be necessary.

---

Table 1

RPW Standard Mail Categories and Category Levels for Price Elasticities as Reported in the Appendix

**Category Levels for Price Elasticities (per BCP Appendix)**

Non-auto	Auto	CR Basic	CR-HD & Sat
(1)	(2)	(3)	(4)

**Standard Mail Categories**

(per RPW Quarterly Report):

1. HD & Saturation Letters
  2. HD & Sat. Flats & Parcels
  3. Carrier Route
  4. Letters
  5. Flats
  6. Parcels
- 

**B. The time frame should coincide in any apples-to-apples comparison of BCP's elasticity estimates with those of the Postal Service.**

BCP state that:

The estimated elasticities presented in Table 3 and the Appendix, were all derived using sample averages **for the year 2013**. This is the most recent full year in our time. Therefore, the estimates characterize the most recent demand behavior of U.S. postal customers. [*Id.*, p. 18 (emphasis added).]

In the context here, the reference to “2013” appears to refer to the calendar year, as the reference is not explicit. Postal Service elasticity estimates are based on fiscal year data and any comparison with USPS results should be based on data which span the same 12-month period.

**C. Multiple elasticity estimates raise the issue of which estimates should be used to study conformity with Postal Service estimates.**

BCP make the following interesting observation:

The matrices derived from the fitted model show that own-price elasticities of demand are related to the level of aggregation of mail and **tend to become larger (in absolute value) as mail categories are disaggregated.** [*Id.*, p. 1 (emphasis added).]

In other words, using the same basic methodology and the same data base, BCP indicate that varying the level of aggregation will result in elasticity estimates that differ systematically, and sometimes materially, from elasticity estimates for a higher level of aggregation. This result is not intuitively apparent, and BCP do not suggest any economic explanation for why this generally should be the case. As the data are progressively disaggregated to smaller and smaller subsets, the ultimate disaggregation naturally occurs at the level of the individual mailer.<sup>2</sup>

BCP describe yet another way to obtain alternative elasticity estimates using their data and their methodology:

To obtain complete matrices of FWI price elasticities we can refit the entire model with the FWI prices substituted for the revenues per piece in the trunk equation and in the AIDS share equations. In effect, the FWI prices are used directly as proxies for revenues per piece rather than to derive instruments by fitting the reduced form equations. The elasticities that result from this approach **are elasticities defined as they are in previous models and tend to be smaller in magnitude than the corresponding revenue**

---

<sup>2</sup> This finding by BCP of larger own-price elasticities at the disaggregated level would seem to accord with prior testimony by Larry Buc in Docket No. R2013-11 that a survey of individual mailers indicates elasticities higher [in absolute value] than those found by the Postal Service. *See* Docket No. R2013-11, Statement of Lawrence G. Buc attached to comments of NPPC, MMA and NAPM (Jan. 26, 2013).

**per piece elasticities** presented in Table 3 and Appendix. [*Id.*, p. 21 (emphasis added).]

BCP's approach is capable of producing multiple elasticity estimates,<sup>3</sup> depending on (i) the level of disaggregation, or (ii) whether prices are represented by average revenues or the FWI prices. In order to analyze the extent to which their estimated "elasticities derived from the estimated equations **conform well to ... the USPS elasticity results**," BCP need to indicate which of their elasticity estimates should be used for such a comparison.

## **II. The merits of BCP's methodology versus that of the Postal Service warrants more discussion.**

The following section assumes, *arguendo*, that BCP estimated elasticities "conform well to ... the USPS elasticity results." If BCP's results do indeed conform to and reinforce USPS elasticity estimates, it would be helpful for BCP to discuss what they consider to be the advantages (and disadvantages) of their model **versus that of the Postal Service**, as no obvious need compels the Postal Service or the Commission to have available competing elasticity estimates each year, most especially if they generally are considered mutually confirming.

Although it is reassuring to have available an alternate methodology capable of providing such independent confirmation, it is not obvious why repeating both exercises each year would warrant the effort. If not, and only one model is to be used for annual elasticity

---

<sup>3</sup> BCP state that: "The estimates also show that an own-price elasticity drawn from a conventional econometric model that omits cross-price effects is roughly equivalent to the sum of the **true own-price elasticity** and all the omitted cross-price elasticities." [*Id.*, p. 1 (emphasis added).] In light of the various elasticity estimates which BCP discuss and that are obtainable using their methodology and their data base, it would be helpful if they were to indicate with more particularity which estimates they consider to be the "true" own-price elasticity estimates.



estimates, BCP should discuss the reasons for replacing the Postal Service model with their model.

**III. BCP's reference to indirect competitors causing the long-term downward trend of postal demand warrants further exposition.**

BCP state as follows:

The fitted trunk demand equation confirms and extends a familiar narrative. The **long term trend** of U.S. postal demand is downwards **due to the gradual encroachment of indirect competitors....** Most recently, the penetration of the Internet has heavily and negatively influenced the demand for domestic mail services. [*Id.*, p. 6 (emphasis added).]

The term “due to” implies causation. Economic understanding would be enhanced by brief elaboration of what BCP intend by their allusion to “indirect competitors.” That is, what major factors underlie the long-term downward trend? Assuming BCP intend something other than Internet usage, which they discuss separately and label as a more recent influence, are they referring to indirect competitors such as:

- TV advertising?
- Radio advertising?
- Periodicals advertising?
- Long-distance telephone calls?
- Billboard advertising?
- Something else?

None of the different variables listed in BCP's Table 1, Reduced Form and Trunk Equation Estimates, on p. 7, would appear to represent “indirect competitors.” Table 1 does, however, include separate explanatory variables for Internet Penetration, which BCP describe as a more recent influence.

**IV. Potential benefits from expanded and improved elasticity estimates may never be fully realized.**

The methodology employed by BCP enables the estimation not only of own-price elasticities for postal products, but also cross-price elasticities between the various products. Comprehensive estimates of cross-price elasticities have not been available from the demand equations estimated annually by USPS, hence BCP's approach represents a potential achievement worthy of note. With respect to this achievement, BCP conclude their paper with the following comment:

Although conventional demand models allow for forecasting of U.S. postal volumes with fair accuracy, **postal rate-setting is more demanding**. Setting postal rates **requires accurate estimates of cross-price elasticities** among postal products, at least, among those that are close substitutes or complements. However, **conventional econometric methods** do not offer a practical way to estimate them and, typically, **ignore cross-price effects** by simply omitting the cross-prices from the demand equations. This paper, along with previous papers by Cigno *et al* (2013b) and Swinand and Hennessy (2014), provides proof that modern econometrics offers several effective ways to obtain complete and consistent matrices of postal price elasticities. [*Id.*, pp. 22-23 (emphasis added).]

BCP's claim about the demands of postal rate-setting would appear to be overstated. Ever since the Postal Reorganization Act became effective in 1970, postal rates have been set repeatedly without the benefit of having available any estimates of cross-price elasticities. Further, since Postal Accountability and Enhancement Act became effective at the end of 2006, the Postal Service has appeared to pay scant attention even to own-price elasticities in setting rates. Consequently, it is difficult to envision cross-price elasticities being in much demand by

the Postal Service for use in its rate-setting exercises.<sup>4</sup> As for the Commission's role in annual CPI price adjustments, its review appears limited to minimum possible legal requirements — *e.g.*, adherence to the rate cap and discount passthroughs — in which estimates of elasticities and cross-elasticities play no role and have little value.<sup>5</sup> And in the only exigent rate increase under PAEA, the Commission approved the Postal Service's request for an across-the-board rate increase in which neither elasticities nor cross-price elasticities played any role whatsoever. Hence, notwithstanding assertions by BCP to the contrary, it is far from clear that postal rate-setting will actually use more and better elasticity estimates.

---

<sup>4</sup> The availability of cross-price elasticities may provide the Postal Service with a new tool to help it rationalize *ex post* those price adjustments that fail by a wide margin to improve the Postal Service's liquidity and net contribution. *See* Docket No. ACR2013, Valpak Initial Comments (Jan. 31, 2014), pp. 18-42. However, any such *ex post* rationalization is a different matter altogether.

<sup>5</sup> Estimates of own-price elasticity of demand play a critical role in the Valpak model for increasing contribution within the rate cap. That model demonstrates a method for systematically increasing contribution using elasticity information. The most recent version of that model incorporated the own-price elasticities for Standard Mail as reported by the Postal Service on January 22, 2014. More accurate estimates of own-price elasticity for individual products, if available from the BCP approach, could be incorporated readily into the Valpak model. In its FY 2013 ACD, however, the Commission chose to ignore almost entirely the results and implications of the Valpak model, discounting them in part as relying on aggregated elasticity estimates. Real world postal rate-setting thus appears to be a far less demanding exercise than BCP assert.